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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,303	11/04/2003	Sylvain Colin	30320/15638	6744
4743	7590	10/19/2005	EXAMINER	
MARSHALL, GERSTEIN & BORUN LLP 233 S. WACKER DRIVE, SUITE 6300 SEARS TOWER CHICAGO, IL 60606			FINNEREN, RORY B	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/701,303	COLIN, SYLVAIN
	Examiner Rory Finneren	Art Unit 2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on Nov. 4, 2003.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-21 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 11/4/2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### *Drawings*

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "output" #154, "device" #200', "support substrate" #250, and "controller" #424. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 7, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blauvelt (5,127,072) in view of Shimizu (US 2003/0128728 A1).

Regarding claim 1, Blauvelt teaches the claimed laser device comprising: a laser source disposed on a substrate (Abstract, line 3); a photodiode disposed on a substrate (Fig. 3, #29); and an optical isolator disposed between the laser source and the output device (Fig. 3, #33 and Abstract, line 4). Blauvelt does not teach the laser partially reflecting from the front face of the isolator. Shimizu teaches reflecting a laser off of the face of an isolator (Paragraph [0018]). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Blauvelt with that of Shimizu for the purpose of monitoring the laser output in a more space-efficient manner than a back-facet diode or beamsplitter.

Regarding claim 7, Blauvelt discloses the claimed laser device comprising: a first lens disposed to couple the laser energy into the optical isolator as a collimated beam and disposed to couple partially reflected laser energy to the photodiode (Fig. 3, #30). Blauvelt lacks a second lens disposed to receive the collimated beam and couple the collimated beam to the output device. However, Shimizu teaches a second lens (Fig. 1, #105) used to receive a collimated beam and couple the beam to an output device (Fig. 1, #101). Therefore, it would have been obvious to one skilled in the art at the time of the invention to dispose a second lens to receive and couple the beam to an output device in order to provide the output device with a focused beam.

With regard to claim 9, Blauvelt teaches the claimed method of tapping a portion of laser energy from a laser device, the method comprising: disposing a lens between the laser source and the output device to couple the laser energy from the laser source into the output device (Fig. 3, #30); disposing an optical isolator between the lens and

the output device (Fig. 3, #33); and disposing the optical isolator in a tilted configuration (Fig. 3, #33 and Col.3, lines 27-30). Blauvelt does not disclose reflecting a portion of the laser energy off of the isolator and onto a desired location. However, Shimizu does teach the method of reflecting laser energy off of an isolator (Paragraph [0018]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to reflect the laser off of the isolator in order to monitor the output of the laser in a more efficient manner than using a rear-facet diode or a beamsplitter.

Regarding claim 13, Blauvelt teaches the claimed method except for a second lens between the optical isolator and the output device, wherein the first lens and the second lens form a collimating lens pair. Shimizu teaches disposing a second lens (Fig. 1, #105) between the optical isolator and the output device, wherein the first lens (Fig. 1, #103) and the second lens form a collimating lens pair. Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the method of Blauvelt to use a second lens to form a lens pair for the purpose of focusing the beam onto the output device.

Claims 2, 4-6, 8, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blauvelt.

As to claim 2, Blauvelt teaches the claimed laser device, further comprising a submount (Fig.1, #26) mounted to the substrate (Fig. 1, #24), wherein the photodiode (Col. 3, lines 3-4) and laser source (Col. 2, lines 66-67) are mounted to the submount.

Regarding claim 4, Blauvelt teaches the claimed laser device wherein the laser source and the first lens are aligned on a first optical axis and wherein the optical

isolator defines a second optical axis that forms an acute angle with the first optical axis (Fig. 3 and Col. 3, lines 27-30).

As to claim 5, Blauvelt discloses the claimed invention except for the angle between the two optical axes being between 0 and 15 degrees. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the angle be between 0 and 15 degrees, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With regard to claim 6, Blauvelt discloses the claimed laser device wherein the optical isolator has a back face and front face that are parallel (Fig. 3, #33).

As to claim 8, Blauvelt discloses the claimed laser device wherein the photodiode is laterally displaced from the laser source (Fig. 3, #29).

Regarding claim 10, Blauvelt teaches the claimed method comprising disposing a photodiode at the desired location to detect the portion of the laser energy (Fig. 1, Fig. 3, #29).

As to claim 11, Blauvelt teaches the claimed method wherein the optical isolator is disposed such that a front face of the optical isolator forms an acute angle with an axis defined by the laser source (Fig. 3 and Col. 3, lines 27-30).

With regard to claim 12, Blauvelt teaches the claimed method wherein the optical isolator has a back face parallel to the front face (Fig. 3, #33).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blauvelt in view of Novotny (6,069,853).

With regard to claim 3, Blauvelt teaches the claimed laser device comprising a first lens disposed between the laser source and the optical isolator (Fig. 1, #30), the first lens positioned to couple the laser energy to the output device. Blauvelt does not teach the first lens being positioned to couple the partially reflected laser energy to the photodiode. Novotny, however, teaches a lens being used to couple reflected laser energy to a photodiode (Col. 3, lines 33-36). Therefore, it would have been obvious to one skilled in the art at the time of the invention to use a lens to couple the reflected laser to a photodiode for the purpose of focusing the light onto the diode.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marmur (2003/0043432) in view of Shimizu.

As to claim 14, Marmur teaches the claimed transponder comprising: a receiver stage (Fig. 1, #11); a controller (Fig. 1, #12); and a transmitter stage (Fig. 1, #24, #26), the controller being coupled to the receiver stage and the transmitter stage (see unlabeled data path arrows), a transmitter stage comprising: a laser source (Fig. 1, #24, #26); an optical objective between the laser and an output device to couple the laser energy from the laser source to the output device (Fig. 1, #27). Marmur does not teach an optical isolator positioned to reflect the laser. Shimizu, however, teaches the reflecting of a laser off of an optical isolator (Paragraph [0018]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Marmur to include an optical isolator used to reflect the laser.

Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marmur in view of Blauvelt.

With regard to claim 15, Marmur teaches the claimed transponder except for a photodiode positioned adjacent the location laterally displaced from the laser source. Blauvelt discloses a photodiode positioned adjacent the location laterally displaced from the laser source (Fig. 3, #29). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a photodiode for the purpose of monitoring a portion of the outgoing laser energy.

Regarding claim 16, Marmur teaches the claimed transponder except for the laser source and photodiode being formed on a submount. Blauvelt discloses a laser source (Fig. 1, #28) and photodiode (Fig. 1, #29) formed on a submount (Fig. 1, #26). Therefore, it would have been obvious to one skilled in the art at the time of the invention to form the laser and photodiode on a submount for the purpose of mounting them on a surface with high thermal conductivity.

As to claim 17, Marmur teaches the claimed transponder except for the optical isolator that is tilted relative to an axis defined by the laser. Blauvelt discloses an optical isolator that is tilted relative to an optical axis defined by the laser source (Fig. 3 and Col. 3, lines 27-30). Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the teaching of Marmur to include an optical isolator that is tilted relative to an axis defined by the laser for the purpose of minimizing the amount of reflected laser energy that strikes the laser source.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marmur in view of Shimizu.

With regard to claim 18, Marmur teaches the claimed transponder except for the optical objective comprising a first lens and a second lens, wherein the optical isolator is positioned between the two lenses. However, Shimizu teaches a first lens (Fig. 1, #103) and a second lens (Fig. 1, #105) with an optical isolator (Fig. 1, #193) positioned between the two lenses. Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the teaching of Marmur to include a first lens, a second lens, and an optical isolator positioned between the two lenses in order to prevent back scatter interference at the laser source.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marmur in view of Blauvelt, and further in view of Novotny (6,069,853).

Regarding claim 19, Marmur teaches the claimed transponder except for the optical objective comprising a lens positioned to couple the laser energy to the output device and positioned to couple the partially reflected laser energy to the location laterally displaced from the laser source. Blauvelt discloses an optical objective comprising a lens to couple the laser to the output device (Fig. 1, #30). Novotny discloses a lens positioned to couple reflected laser energy to a location laterally displaced from the laser source (Col. 3, lines 33-36). Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the transponder of Marmur to include a lens positioned to couple the laser to the output device for the purpose of focusing the laser onto the output device and also couple the reflected energy to a location laterally displaced from the laser source for the purpose of monitoring the laser output.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marmur in view of Feng (2001/0050333).

As to claim 20, Marmur teaches the claimed transponder except for the receiver stage comprising a photodiode; a trans-impedance amplifier; and a boosting amplifier. Feng discloses a photoelectric receiver circuit comprising a photodiode (Fig. 3, "PD"); a trans-impedance amplifier (Paragraph [0029] and Fig. 3, #10, #12); and a boosting amplifier (Fig. 3, #30). Therefore, it would have been obvious to one skilled in the art at the time of the invention to include a photodiode for the purpose of converting the light signal into an electrical signal; a trans-impedance amplifier to speed up the response time of the circuit; and a boosting amplifier to increase the gain of the signal.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marmur in view of Kurotori (6,333,803).

With regard to claim 21, Marmur teaches the claimed transponder except for a modulator and an optical amplifier coupled to receive laser energy in the transmitter stage. Kurotori teaches a transmitter stage with both a modulator (Fig. 1, #6) and an optical amplifier (Fig. 1, #2) coupled to receive the laser energy. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the teaching of Marmur and include a modulator for the purpose of superposing desired information upon the light with the desired wavelength and also to include an optical amplifier to increase the optical signal strength without an optical to electrical to optical conversion process.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rory Finneren whose telephone number is (571) 272-2243. The examiner can normally be reached on Mon. - Fri. 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Oh Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rbf

MINSUN OH HARVEY  
PRIMARY EXAMINER